1907.

QUEENSLAND.

LONDON SCHOOL OF LIBRARY TROPICAL MEDICINE

ANNUAL REPORT OF THE COMMISSIONER OF PUBLIC HEALTH.

Presented to both Houses of Parliament by Command.

TO THE UNDER SECRETARY, HOME DEPARTMENT, BRISBANE.

Office of the Commissioner of Public Health,
Brisbane, 20th September 1907.

Sir,—I have the honour to submit my Report on the work performed by this Department on matters concerning the public health for the year ending 30th June, 1907.

The organisation called into existence by "*The Health Act of* 1900" continues to be developed: efficiency, with due regard to economy, being steadily kept in view.

I regret, however, to have to state again that the resources of the Department have not been adequate for the fulfilment of many of its aspirations.

The work performed by the Health Inspectors attached to this Department during the last financial year was considerably greater than that carried out during any previous year. The increased desire of the Department to settle questions involving important health considerations in the more northern centres of population, and the increasing desire on the part of the local authorities for personal conference with myself or my officers, led to a prolonged official visit of my Chief Inspector, Mr. Simpson, to all the more important towns in the North. Among others, Mr. Simpson visited the following places:—Bundaberg, Mackay, Bowen, Rockhampton, Mount Morgan, Townsville, Charters Towers, Cairns, Mungana, Irvinebank, Stannary Hills, Geraldton, and Chillagoe. The sanitary circumstances of each of the above-mentioned places will be brought under the notice of the local authorities concerned as the reports of the inspector come to hand.

As one attempts to view annually, for the purposes of report, the progress which is made from year to year, one is constantly reminded of the fact that the real aim and object of the Department are "not understood."

This misunderstanding does not lie so much, I am pleased to record, with the local authorities, who, in by far the great majority of instances, have honestly done their best with the resources at their command, as with a certain class of the community who cannot, or will not, recognise that a Department of Public Health is necessarily a progressive organisation, and demands, for the proper conservation of the public health, to be something more than merely an agency for the expenditure of money.

Sanitary reform, whilst praised in the abstract, has never met with, nor is likely to meet with, much sympathy or commendation.

The public apathy in the matter of the daily food supplies has on many occasions been referred to in my annual reports. Too much is expected of the central authority, and too little is done by the local authority, in the matter of protecting the people from adulterated and sophisticated foodstuffs.

The expense attached to the appointment by local authorities of competent and fully qualified analysts is, no doubt, an incentive to the ever-increasing reliance placed on the Department to execute on behalf of the local governing bodies the provisions of the Act relating to food.

It has been said that sanitary legislation is of but little service if it goes too far ahead of the knowledge and intelligence of the people, but in this connection it may also be stated that the individual as well as the public must move with the times. The individual can do much for himself or herself in this matter of unwholesome food.

No matter how sound and wholesome the food may have been when purchased in the shop or at the market or from the dealer, it cannot be expected that it will remain fresh and wholesome if stored in insanitary surroundings. The food "safe" and larder may often be labelled as domestic "infected areas." Milk and meat are the chief sources of danger.

Milk is pre-eminently the food that needs most careful protection, but so far from such protection being given to it, we find that at each successive stage of its production, carriage, and storage, it is recklessly exposed to infection with extraneous matter. The slovenly farmer, the careless and dirty milkman or maid, and the thoughtless housewife or domestic servant are responsible units in the terrible toll of infantile life extorted each year. The feeding-bottle from which the hapless infant is fed is often a fine breeding place for germs. It has been truly said that often such a bottle "has not been sterile since it was in the molten condition in the mould."

The domestic storage of meat and bread is also a matter for the careful housewife. Cold storage in an ice chest or a refrigerator is a luxury often beyond the means of the poorer class of the community, but the protection of these foodstuffs from flies and dust should at least be possible.

The practice of buying the daily joint from the often insanitary cash meat carts is to be condemned. If the household could but see the handling and sorting of the meat exposed for sale in these carts which hawk it about from one part of the city to the other, purchases would soon cease and the evils arising from the existence of this system of supply would disappear.

While it must be admitted that the individual cannot always adequately protect himself from unwholesome foodstuffs supplied to him, it must, however, be also admitted that he can do much to prevent further contamination. Cleanliness covers the whole field of sanitation. Practised in its entirety, it would practically banish disease, but, like Charity, it must begin at home.

At my request the officers of the Brisbane Municipal Council inspected and condemned certain premises in the West, North, and Valley Wards of the city area. The premises in question were found to be so dilapidated as to have become unfit for occupation. Acting on the report of the Medical Officer of Health and the City Inspector, the Brisbane Council ordered these premises to be demolished. The removal of these and similar "eyesores" within the very centre of the city should do much to improve adjoining properties, and is in the best interests of the metropolis itself.

The number of samples of foodstuffs forwarded through the Department to the Government Chemical Laboratory for analytical examination was greater than in previous years. For the most part the samples examined were found to conform with the requirements of the Act and Regulations with regard to quality and standards; the chief objection being, as formerly, the wording on the labels. The amount of work performed by the Government Analyst on behalf of the Health Department has increased, and I sincerely trust that the recent transfer of the Government Chemical Laboratory from this Department to that of the Treasury will not interfere with or delay the important work which has for the past year been of a prompt and satisfactory character.

Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid fever, and other infectious diseases within the meaning of the Act have been continued daily and without interruption at the Government Bacteriological Institute. This service has been essential to early and positive recognition of the above-mentioned diseases, which are produced by bacterial causes, and upon which the medical practitioners throughout the State have relied upon to prevent errors in diagnosis.

The amount of work done for the Health Department by both the Chemical and Bacteriological Laboratories increases each year, and certain new methods have been initiated in both institutions which will, it is hoped, secure greater accuracy and more rapid results—*e.g.*, it is now possible for Mr. Henderson, the Government Analyst, to examine at least 100 samples of milk per diem as against 20 samples previously.

The Bacteriological Institute has also recently been transferred from the Health Department to the Department of Agriculture. I desire to place on record my thanks and appreciation of the services rendered to my Department by both Mr. J. B. Henderson, the Government Analyst, and Mr. C. J. Pound, the Government Bacteriologist. Much good work has already been done by both of these gentlemen, and much still remains to be done.

School hygiene has attracted much attention during the past year, but a more general movement towards a systematic inspection, or at least an adoption of a systematic method of inquiry into the health and physical culture of the children in our public schools is exceedingly desirable.

Child study is as really essential as Nature study. The teacher detects, the medical officer confirms; but the primary responsibility should not be placed upon the teacher. It is much to be desired that both the Government and school authorities should realise that the future of a people depends on the upbringing of the children, and that the mere imparting of a literary education is not all, or the first thing, that is required. The medical inspection of school children in other States of the Commonwealth, and in countries abroad, has resulted in much more attention being paid to the defects of sight and hearing, and other errors, more or less the outcome of school environment.

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The serious and increasing danger arising from Blight or Acute Contagious Ophthalmia among the children of Western Queensland calls for the most prompt and energetic action. This disease is of a highly contagious character, and is largely disseminated through the medium of schools, where instances have occurred in the Western parts of Queensland of large numbers of healthy children becoming rapidly infected from other school children affected with "bad eyes." Contagion is effected by direct contact or by the fingers rubbing the eyelids after contamination with the discharge from an infected case, or by means of flies. Dr. E. R. Row, of the Thargomindah Hospital, has furnished a report, in which he states that "Some legislation should be brought in to compel parents to see that their children's eyes are properly attended to when at home. Parents allow their children who are so affected to go about with dirty faces and untidy, and when at home to use the same washing utensils and the same towels, apparently not giving a passing thought as to the result, and thus the germs of granulation and other diseases of the eye, which are ever ready, are cast around, and all clean and healthy children soon become affected with granulation and in-growing eyelashes. . . . I think the best means to eradicate the evil is to have the children examined periodically at school by a doctor, and the parents compelled to look after their children when at home. If children were debarred from attending school because of their bad eyes the school would soon be empty, as the majority of the children are so affected."

Dr. Hewer, of Longreach, who has had considerable experience of eye blight, also expressed his views to me in much the same terms. He pointed out the fact that no inconsiderable proportion of the children so affected ran the risk of becoming incurable or permanently blind.

The value of healthy children as assets to the State cannot be over-estimated. The scientific study of the protection of infant life is engaging every year, more and more, the attention of thoughtful men. Instruction in the principles of hygiene is necessary to enable children to fitly discharge their duties in after life. The difficulty of finding the right kind of teachers would soon be overcome if the teaching was organised and fitted so as to fall in with the educational system.

At the International Congress of School Hygiene held at London during the year, it was shown that in most of the countries represented at the congress—namely, France, Germany, Switzerland, Sweden, Austria, Hungary, Norway, Servia, Roumania, Japan, Russia, and the Argentine Republic—medical inspection of schools is either a State institution or is enforced by magisterial decree or by legal enactment. "The effect of such inspection modifies the spread of tuberculosis, it lessens the possibility of contagious diseases, and raises the standard of health in the community by special attention to the teeth, eyes, ears, throats, and bodies of the children. It detects and prevents deformities and favours growth on normal lines; it assists moral control and encourages self-respect and thrift, aspects of paramount importance in any community of whatever country."

The appointment of Mr. L. E. Mellish to the position of Secretary to the Department will, I feel sure, do much to place the clerical work of the office on a sounder and more satisfactory basis than it has been for some time past.

No case of sea-borne exotic disease was reported during the year. The proximity of the State to the East and other principal endemic foci, the extent of the coast line, and the numerous ports of call, render the State of Queensland peculiarly liable to attack from foreign contagion, and it says much for the careful watch constantly maintained at our ports that so far nothing has happened to seriously affect the health of our people or the shipping and commerce of the State.

The Federal Quarantine Bill now before the Senate should do much to secure that uniformity of action and certainty of procedure which up to the present has been absent in the Commonwealth.

As in former years, plague again made its annual reappearance in Brisbane, the number of cases in human beings since the 1st July, 1906 to 30th June, 1907, being thirty-nine.

For the same period 20,799 rats were destroyed by the departmental gang within the metropolitan area. Of the above number 14,631 rats were examined for evidence of plague infection, and 43, or ·29 per cent., were found so infected.

A voluminous report on plague in Queensland for a period covering eight successive years—1900-1907—has been prepared by me, and will be shortly available for publication. Apart from the statistical data collected and collated, the report deals exhaustively with the medical, preventive, administrative, and epidemiological aspects of plague as observed in Queensland. The scientific nature of the report will, I venture to anticipate, be recognised by not only the health authorities of the Commonwealth and abroad, but by the diplomatic or consular agencies of the countries and Governments, which latter, as signatories to the International Sanitary Convention of Paris, 1903, are entitled to the detailed information set forth therein.

The practical question for those who live in countries liable to visitations of the plague is how best to exterminate the rat and the rat-flea, which are the principal carriers of the disease. The species, habits, and habitats of the rats concerned in the spread of plague, and the life-history of the flea which transmits the infection, are discussed at some length in the report.

Coll. Call No.

INFECTIOUS DISEASES.

NOTIFICATION.

The following are the cases of infectious diseases in respect of which formal certificates were received by the Department from medical practitioners throughout the State:—

Diseases.	1st July to 31st December, 1906.	1st January to 30th June, 1907.	Totals.
Diphtheria	186	202	388
Membranous Croup	1	3	4
Typhoid Fever	194	322	516
Erysipelas	21	32	53
Puerperal Fever	3	12	15
Continued Fever	...	...	...
Relapsing Fever	...	...	...
Phthisis	102	91	193
Scarlet Fever	14	12	26
Totals	521	674	1,195

The only deaths from phthisis formally received are as follows:—

1st July to 31st December, 1906	52
1st January to 30th June, 1907	37
Total	89

METROPOLITAN AREA.

Distribution of cases of infectious diseases formally and other reported in the Metropolitan area for year ending 30th June, 1907:—

Local Authorities.	Typhoid Fever.	Scarlet Fever.	Puerperal Fever.	Diphtheria.	Erysipelas.	Phthisis.	Totals.	Phthisis—Fatal.
Brisbane	47	3	7	59	18	64	198	31
South Brisbane	36	3	2	77	7	46	171	32
Ithaca	16	...	1	37	10	19	83	8
Windsor	5	...	3	11	2	6	27	2
Stephens	4	...	1	14	...	7	26	4
Sandgate	...	...	...	2	...	1	3	...
Balmoral	3	...	...	2	...	3	8	2
Belmont	...	...	...	...	...	...	...	...
Coorparoo	...	...	2	4	1	2	9	...
Enoggera	...	...	...	1	...	2	3	1
Hamilton	5	...	1	8	4	4	22	2
Sherwood	3	...	...	1	...	6	10	2
Taringa	1	1	...	4	1	4	11	1
Toombul	3	...	...	11	3	4	21	3
Toowong	8	...	...	7	...	6	21	2
Wynnum	8	...	...	7	...	1	16	...
Kedron	...	...	1	2	4	1	8	...
Indooroopilly	...	...	...	...	...	...	...	...
Yeerongpilly	...	...	...	...	...	...	...	...
Totals	139	7	18	247	50	176	637	90

Total number of premises disinfected, 595.

DISINFECTION.

Decided advances have been made during the past year in our knowledge of disinfection, of the preparation of disinfectants, and of the proper mode of testing them. "There are still many points requiring further investigation, notably the complex question of disinfection in the presence of organic substances. Fæces are perhaps the most variable of organic products, but it is doubtful if results obtained by some investigators tend to anything of a practical nature. In order to arrive at the proper and real value of a disinfectant, it is necessary to know for what particular purpose a disinfectant is required. There can be no doubt that the various preparations should be severally tested under conditions resembling as closely as possible those that will be present during its application."

PLAGUE.

For eight years in succession Brisbane has been visited by an epidemic of plague. The last case in man, in 1906, was reported on the 18th December; the last infected rat on 28th December, 1906. The first case in human beings in 1907 occurred in Brisbane on 3rd January, the first infected rat being found in the city on 2nd January, 1907.

The experience gained in former years was of service in the methods adopted for dealing with the actual epidemic, but it was felt that more efficient methods of destroying rats, and, if possible, preventing the recurrence of the disease year after year, was the real aim and end to be kept in view. Some legal enactment in the direction of compelling occupiers of premises to keep the latter free from rat-infestation is most urgently required.

Twenty-one cases of plague were reported for the month of January, 1907, in the Metropolitan Area. Of the above, no less than 16 cases occurred in one small localised area at Kingsholme, New Farm. The cases were interesting from the fact that all were attacked within a short period, and, apparently, had one source of infection common to all. The source of the outbreak was traced to a general and produce store situated in James street, Kingsholme. The bulk of the produce sold at the local store had been obtained from a city produce store where plague-infected rats had been found a few weeks previous to the outbreak. A great accumulation of filth and rubbish was removed by the departmental rat and cleansing gang from beneath the floors of the general and fruit shops in James street. Three men of the above gang employed in removing this rubbish were attacked with plague. One man died in the Plague Hospital on 31st January, the other two progressed slowly, but finally recovered. The entire "infected area" received the most thorough cleansing, and was diligently searched for rats. Many sanitary defects were remedied and certain structural improvements ordered to be carried out by the local authority. No further cases occurred in this area after the cleansing operations had been completed. Sporadic cases continued to be reported from other parts of the metropolitan districts during the months of February, March, April, and May, and in every instance the source of infection was traceable to infected rats.

A fatal case was reported from Ipswich early in February. A fatal case, reported after death, occurred at Townsville on 17th March. This patient had been employed in a produce store, where dead rats were subsequently obtained.

Towards the latter end of January, 1907, some 31 cases of illness were reported by the Health Officer at Port Douglas as suggestive of plague. These cases occurred in the Mossman district, a sugar-growing locality situated some 15 miles from Port Douglas. The epidemic was characterised by slight glandular enlargements in the groins, armpits, and neck, raised temperature, slow and low tension pulse, headache, slight congestion of the eyes, and some delirium.

In ten cases the phenomena was more pronounced and "specimens" of lymph taken from more or less defined buboes were found to contain plague bacilli by the Government Bacteriologist. In all, some 60 persons were reported by the local Health Officer as suffering from *Pestis Minor* or mild plague.

The Department Health Officer (Dr. Chesson) was despatched to the Mossman district to inquire into and report upon the circumstances of the outbreak. The patients observed by Dr. Chesson, at the time of his visit, early in May, were not, in the opinion of that officer, suffering from plague, the bacterioscopic, cultural, and inoculation tests being negative in every instance. The fact remains, however, that in at least 10 of the earlier cases bacilli morphologically resembling plague were observed in the "specimens" forwarded to the Department for examination.

The destruction of rats infesting the Northern canefields was a problem demanding the most careful consideration, affecting as it did the financial and political aspects of the sugar-growing industry. It was early apparent that a wholesale and effective method of clearing the canefields of the vermin by burning off a large area, or cutting it to a common centre, would be attended with substantial loss to the growers. On the other hand, the danger to future workers in the field colony, as diseased rats inhabited the plantations, was real and serious. After consultation with the director of the mill, the whole of the plantation was baited with baits prepared from the Dansyz rat virus and with poisoned (phosphorous) material, under the supervision of an inspector of the Department. Good results were obtained, and the demand for the virus and poison has been large from other canegrowers in several places in the North.

The following statement shows the incidence of plague on the State from 1st July, 1906, to 30th June, 1907:—

Place.	Date.	Cases.	Deaths.	Case Mortality.
Brisbane	July–June	39	17	Per Cent. 43·5
Ipswich	12th February ... ... 23rd May	2	2	100·0
Port Douglas	January–May	10	2	20·0
Townsville	17th March	1	1	100·0
Total	...	52	22	42·3

6 cases were reported after death.

Table showing the monthly incidence of plague in the Metropolitan Area in man and rat in the years 1905-6 and 1906-7 (1st July, 1906, to 30th June, 1907) –

Months.	Man.		Rat.	
	1905-6.	1906-7.	1905-6.	1906-7.
July	...	...	1	2
August	...	...	...	8
September	...	...	...	...
October	...	...	...	1
November	...	2	...	...
December	...	1	1	10
January	...	21	1	4
February	...	3	6	6
March	2	3	6	1
April	2	4	3	5
May	2	4	5	3
June	2	1	6	3
	8	39	29	43

The total number of rats and mice destroyed within the Metropolitan Area for the years 1905-6 and 1906-7, ending 30th June, is as follows:—

—	Number Destroyed.	Number Examined.	Number Infected.	Percentage of Infected Rats.
1905-6...	25,649	14,622	29	·19
1906-7...	20,799	14,631	43	·29

The monthly returns (Metropolitan Area) of rats and mice examined at the Bacteriological Institute for the year 1906-7 are as follows:—

—	Rats Examined.	Mice Examined.	Infected.	—	Rats Examined.	Mice Examined.	Infected.
July	467	100	2	January ...	1,164	85	4
August	634	84	8	February ...	1,436	138	6
September	332	32	0	March	1,593	158	1
October	447	75	1	April	1,322	172	5
November	729	66	0	May	1,794	203	3
December	1,220	66	10	June	1,945	369	3
Totals ...	3,829	423	21	Totals ...	9,254	1,125	22

SPECIES OF INFECTED RATS.

Mus rattus	19
Mus decumanus	22
Mus Alexandrinus	2
Total	43

* * * * * *

Six-monthly return (Metropolitan Area) of rats and mice destroyed, examined, and infected, showing number of men employed in rat-destruction, 1905-6, 1906-7:—

—		Average Number of Men per day.	Rats and Mice Destroyed.	Rats and Mice Examined.	Rats and Mice Infected.
1905-6	July to December	20	11,993	6,679	2
	January to June	10	13,656	7,943	27
1906-7	July to December	10	5,991	4,252	21
	January to June	16	14,808	10,379	22

The monthly returns for year 1906-7 of rats and mice destroyed, examined, and infected were:—

—	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	Totals.
Destroyed	708	1,016	580	806	1,039	1,842	1,877	2,549	2,852	2,012	2,517	3,001	20,799
Examined	567	718	364	522	795	1,286	1,249	1,574	1,751	1,494	1,997	2,314	14,631
Infected	2	8	0	1	0	10	4	6	1	5	3	3	43

LEPROSY.

Seventeen cases of leprosy have been segregated, as compared with 22 cases of last year.

TABULAR STATEMENT OF CASES OF LEPROSY RECORDED IN THE STATE OF QUEENSLAND FROM 1ST JULY, 1906, TO 30TH JUNE, 1907.

No.	Initials.	Sex.	Age.	Race or Nationality.	Occupation.	Form or Type.	Assigned Place of Residence.	Date of Segregation.	Died.	Remaining.
1	C.M.	M.	44	Kanaka ...	Cane-worker ...	Nodular ...	Cairns	23-10-06	...	Yes
2	O.	M.	40	do ...	do ...	Mixed ...	Mulgrave	13-11-06	...	do
3	T.L.	M.	30	do ...	do ...	Nodular ...	Cairns	11-1 07	...	do
4	M.	M.	30	do ...	do ...	Nerve ...	do	13 2-07	...	do
5	T.	M.	30	do ...	do ...	Nodular ...	do	13-2-07	...	do
6	M.	M.	40	do ...	do ...	do ...	Herbert River ...	15-4-07	...	do
7	P.L.	M.	30	do ...	do ...	do ...	Ingham	15-4-07	...	do
8	W.T.	M.	40	do ...	do ...	do ...	Halifax	15-4-07	...	do
9	H.F.	M.	19	Australian (Q.)	Cane overseer ...	do ...	Cairns	15-4-07	...	do
10	C.	M.	30	Kanaka ...	Labourer ...	do ...	do	21-5-07	13-1-07	
11	B.	M.	50	do ...	Gardener ...	do ...	do	21-5-07	...	do
12	P.M.	F.	13	Australian (Q.)	School girl ...	do ...	Charters Towers ...	21-5-07	...	do
13	N.M.	F.	22	do ...	Domestic duties	do ...	do	21-5-07	...	do
14	J.E.	M.	45	Kanaka ...	Labourer ...	do ...	Townsville	24-6-07	...	do
15	C.S.	M.	35	Australian (Q.)	do ...	do ...	Bundaberg	30-7 07	...	do
16	A.L.Y.	M.	28	Chinese ...	Gardener ...	do ...	Geraldton	30-7-07	...	do
17	F.G.	M.	26	European ...	Labourer ...	do ...	...	15-4-07	...	do

The new lazaret at Peel Island, where separate accommodation is provided for each patient—with separation of the sexes, the coloured inmates from the whites, as also isolation of the various forms of leprosy—has greatly added to the comfort of these afflicted people.

The houses for the lepers have been built with the view to establishing a suitable and conveniently arranged leper settlement. The arrangement will admit the necessary investigation, treatment and practical study of individual cases to be conducted undisturbed, and the work can be so conveniently arranged that the utmost possible economy can be exercised in every respect.

The lepers are treated with the greatest kindness, no interference being exercised with their individual freedom of action so long as such does not conflict with medical instructions or the regulations for the good government of the settlement.

The possibilities the Leper Station now present for a systematic and scientific study of the disease are unique in many ways, and the question of the carrying out of research work demands urgent attention. So far no progress in this direction has been made. Little or no advance has, so far, been made in the treatment of leprosy. Chaulmoogra oil has been extensively used for the purpose, and while it cannot be considered as a specific, it nevertheless appears to produce considerable improvement in some cases where patients have undertaken their own cure and persevered in taking considerable quantities over a prolonged period.

Dr. Ashburton Thompson, Chief Medical Officer of New South Wales, has recently published the case of an English-born patient, who, under the use of very large doses of Chaulmoogra oil, so far recovered that his discharge from the leper lazaret was considered justified. In dealing with the release of lepers from segregation, one great difficulty consists in deciding as to whether the disease ic actually arrested—that is, self-cured—or whether it is simply undergoing one of those periods of apparent quiescence not uncommon to the disease. This difficulty results, as Dr. A. John Gregory, Chief Medical Officer for Cape Colony, in his annual report for 1906 rightly states, "from the prolonged course and slow manifestations of the disease under ordinary circumstances, so that what may appear to be an arrested or cured case is really nothing more than a pause in the active manifestations of greater or lesser duration, the disease, however, persisting during the interval. . . . It is, therefore, not surprising that the question as to whether a particular case is cured or not is one of the greatest difficulty to decide, and that, on the one hand, cases incorrectly believed to be cured have been discharged, or, on the other, cases which could be discharged may have been kept under observation."

PHTHISIS.

The number of cases reported during the year in the Metropolitan Area was 176, as against 148 of last year.

The number of cases reported for the State was 193, as against 113 for the same period in the last annual report.

The operation of compulsory notification continues to be entirely favourable, the improvement in the surroundings of the patients visited by the Staff Nurse being noticeable. Staff Nurse Perry, in her annual report to me in connection with the regulations for the prevention of human tuberculosis, states:—

> "Owing to the number of plague cases during the last six months, I have found it impossible to visit all the cases notified to your Department. I have visited mainly the patients of the working class, observed their mode of living, the condition of the premises, and the preventive measures, if any, adopted.
>
> In the majority of the cases the necessity of explaining to the patients and those in contact with them the danger to which they were constantly exposing themselves was very obvious. The patients were extremely grateful for the interest displayed in their welfare; they continue to welcome my visits, and the majority of the cases make every effort to carry out the rules issued in the leaflets.
>
> A number of patients who have not got well-ventilated rooms I urged to sleep out on the verandah, and this, in several instances, prevented three or four of the family occupying the same bedroom as the patient.
>
> I regret that some of the patients are still careless in failing to notify their removal from one place to another, and the houses vacated by them are very often occupied again before any disinfection has been done.
>
> The new scheme, which was adopted in February last year, in connection with patients' admission to the Jubilee Sanatorium, Diamantina Hospital, and Dunwich, with the active co-operation of the Medical Superintendent and the Superintendents of these institutions, has proved most satisfactory. Some cases had not been notified before their admission to these institutions.
>
> I have again to acknowledge the courtesy of the medical practitioners whose patients I have visited during the year."

FOOD.

As in former years, the inspection and examination of foodstuffs have been almost entirely undertaken by the Department. With the single exception of the Brisbane Municipal Council, no other local authority in the State makes even the pretence of carrying into execution the provisions of the Health Act relating to food. An amendment of the Act is necessary if the laws regulating the sale of foods and drugs in this State are to be brought into line with the standards recently set by Victoria, New South Wales, and Western Australia in the Commonwealth; and New Zealand; and the food legislation recently passed by other countries, such as Great Britain, Germany, France, Belgium, and the United States of America.

The Chief Inspector to the Department (Mr. John Simpson) reports as follows:—

> "Owing to pressure of work in other directions, I have not been able to give the attention I should have liked to this important duty. The wharves and markets, where large quantities of perishable and other produce are handled, have been regularly inspected. The Fish Markets, now under the control of the Metropolitan Fish Board, have been frequently inspected. They have been kept in a scrupulously clean condition, and the cold chambers are a great contrast to the filthy state of things that previously existed. During the year 14 tons of unsound bananas have been condemned and destroyed; 14 lb. of smoked fish exposed for sale at a shop door in a condition unfit for the food of man were seized and destroyed; 1½ cwt. of nutmegs were also condemned and destroyed by fire. Acting under instructions from the Commissioner of Public Health, Mr. G. R. Fraser, Inspector to the Brisbane Municipal Council, seized and condemned a large quantity of foodstuffs damaged by the stranding of the ss. "Airlie," and dumped it at sea.

I procured samples of syrups and cordials from a dwelling-house in South Brisbane, occupied by coloured aliens, who combined the business of lodging-house keepers with that of cordial manufacturers. The samples submitted to Mr. Henderson, Government Analyst, for examination and report, were condemned."

The bulk of the flavouring essences examined were unsatisfactory, and action was taken in each case to have them withdrawn from sale.

Eleven samples of tinned meat out of 38 examined were condemned as containing preservatives.

Jams, jellies, and confectionery were found to be satisfactory, but samples of pickles, sauces, and vinegars fell below the standard in the majority of cases.

Of 18 samples of tinned peas (imported) no less than 15 were found to contain sulphate of copper in amounts from 1·5 to 3·5 grains per lb.

With regard to temperance drinks and liquor, one sample of hop beer was found to contain 16·6 per cent. of proof spirit, while another sample, by the same manufacturer, contained 25·2 per cent. of proof spirit.

Six out of 10 samples of cordials and soft drinks were condemned, owing to the amount of preservative substance contained in them.

Forty-seven samples of liquor were submitted by the Inspector of Inland Revenue (Mr. F. W. Gabriel) who is also an inspector for the purposes of the food sections of the Health Act. Of this number 19 were found adulterated. Nicotine was found in rum from two premises, and the offenders were heavily fined.

A full account of the work performed by the Government Analyst appears in Appendix B hereto.

The following report has been furnished by Mr. Gabriel with regard to the prosecutions instituted and the quantities of foodstuffs destroyed or confiscated:—

During the year 1906-7 the following prosecutions were instituted under the Health Act, viz.:—

Case 1.—Adulteration of chutney. Fined £5.
Case 2.—Adulteration of essences. Fined £5.
Case 3.—Adulteration of essences. Fined £5.
Case 4.—Adulteration of liquor. Fined £10.
Case 5.—Adulteration of liquor. Fined £2.
Case 6.—Adulteration of liquor. Fined £100.
Case 7.—Adulteration of liquor. Fined £100.
Case 8.—Adulteration of liquor. Fined £5.

In addition, the following list of foodstuffs were seized, and either destroyed or ordered to be shipped out of the State:—

FOODSTUFFS CONFISCATED UNDER HEALTH ACT.

Brand of Goods.	Quantity Seized.
Tinned Peas (Petits Pois)	1,037 dozen
Tomato Sauce	72 ,,
Tomato Sauce	$4\frac{10}{12}$,,
Tomato Sauce	$17\frac{7}{12}$,,
Worcestershire Sauce	$101\frac{11}{12}$,,
Worcestershire Sauce	$6\frac{9}{12}$,,
Worcestershire Sauce	$14\frac{1}{12}$,,
Bonton Sauce	5 ,,
Ketchup, Blue Label	$194\frac{8}{12}$,,
Ketchup, Blue Label	$1,319\frac{3}{12}$,, approx. in bond.
Flavouring Essences (ass.)	$6\frac{1}{12}$,,
Pea Sausage (Rhenania)	8 cwt.
Macaroni (Ronoldi)	1 case full, 1 case opened.
Vermicelli (Ronoldi)	1 case opened.

EXAMINATION FOR SANITARY INSPECTOR'S CERTIFICATE.

An examination for Inspector of Nuisances in connection with the certificate granted by the Royal Sanitary Institute of Great Britain was held during the year at Brisbane. Seven candidates, including one at Charters Towers, presented themselves for the written and *vivâ voce* examinations, and of the above number six were passed by the local examining board.

The question of school hygiene is being actively taken up, and the possibility of arranging an examination in the subject under the auspices of the Royal Sanitary Institute is under consideration.

BACTERIOLOGICAL INSTITUTE.

The following return gives the particulars of all specimens examined at the institute during the year. The annual report of the Government Bacteriologist will be found in Appendix C.

TABLE GIVING PARTICULARS OF SPECIMENS EXAMINED AT BACTERIOLOGICAL INSTITUTE DURING YEAR ENDED 30TH JUNE, 1907.

Suspected Disease.	Specimen		Positive.	Negative.
	Nature of—	Number.		
Plague	Rats	14,360	43	14,316
	Mice	1,639	...	1,639
	Pademelon	2	...	2
	Turkey	1	...	1
	Dog	1	...	1
	Lymph	71	25	46
	Serum	57	11	46
	Viscera 114 human cases	10	6	4
	Sputum	5	3	2
	Pus	11	5	6
Tuberculosis	Sputum	454	149	305
	Urine	7	...	7
	Milk from cow	7	...	7
	Pleuro virus	8	...	8
	Pus from kidney	1	...	1
	Fluid from knee	1	...	1
	Pus from knee	1	...	1
	Pus from leg ulcer	1	...	1
	Fluid mammary gland cow	1	1	...
Typhoid	Blood	381	119	262
	Viscera	1	1	...
Diphtheria	Throat swabbings	508	196	312
	Nasal ,,	3	2	1
	Ear ,,	2	2	...
	Dust from school floor	2	...	2
Leprosy	Serum (32 cases)	34	22	12
Gonorrhœa	Pus	24	13	11
	Mucus	1	...	1
Tetanus	Portion of skin	2	...	2
Cerebro-spinal meningitis	Lumbar punctures	5	1	4
Pyogenic bacteria	Pus	11	7	4
Anæmia	Blood	1	1	...
Filaria	Blood	1	...	1
Peritonitis	Pus	1	1	...
Chyluria	Urine	1	1	...
Animal parasites	Fæces	4	...	4
	Viscera from calves	3	1	2
	Ticks (cattle)	2	2	...
	Cyst from human liver	1	1	...
Tick fever	Blood	8	4	4
	Urine	3	3	...
	Viscera	1	1	...
	Gall bile	1	1	...
	Spleen and liver	1	...	1
Pleuro-pneumonia	Fluid from cow	1	...	1
Swine fever	Cæcum	1	1	...
Septicæmia	Viscera of calf	1	1	...
Fowl Enteritis	Chickens	2	2	...
Hydro-thorax	Fluid from bullock	1	1	...
Pathological tissues	Human	186		
	Animal	2		
Miscellaneous	Water	67		
	Urine	15		
	Urine of calf	1		
	Treasury notes for bacteria and disinfection	6		
	Cows' milk	5		
	Curative plague serum	2		
	Stomach contents—sheep	2		
	Maize	1		
	Brine	1		
	Disinfectants	1		
	Rat virus—azoa	1		
	Rat virus –Pasteur virus company	1		
	Fluid from cysts	1		
	Tota	17,938	...	...

QUACKERY AND SALE OF "PATENT MEDICINES."

The following memorandum dealing with the manufacture, importation, and sale in this State of preparations commonly known as patent or proprietary medicines, and the effects of the use of such articles, was submitted by me, at the request of the Hon. the Home Secretary:—

Department of Public Health, Queensland,
Brisbane, 29th October, 1906.

Sir,—In accordance with the instructions of the Honourable the Premier and the Honourable the Home Secretary, I have the honour to submit the following memorandum on the subject of patent medicines and proprietary medicines containing alcohol and scheduled poisons offered for sale in this State:—

I.—THE NECESSITY FOR ACTION.

Australia, like America, is the home of quackery.

A large army of impostors—so-called "Professors," "Herrs," "Nurses," "Herbalists," and "Specialists," who, with little if any professional training in medicine, surgery, midwifery, *materia medica*, chemistry, or pharmacy, and possessing no legal qualifications to practise the same, are allowed at the present time to exist and find a flourishing means of livelihood among our community. Such impostors, and in many cases palpable humbugs, pursue their nefarious calling under no legal restraint or control.

These "Quacks" extensively advertise their so-called "Consumption" and "Cancer Cures," to the detriment of sufferers who, from ignorance or credulous hope, are led to part with their money, and often their only chance of recovery. The absurd pathological conditions set out in their advertisements tend to produce an exaggerated dread of disease, and while it is difficult to sometimes draw the line between advertisements of a *bonâ fide* nature and those apparently "manufactured," the "testimonials" published regarding the curative properties of these medicaments, if not entirely fraudulent, are, in most instances, solicited and obtained from "patients" by methods which at once deprive the so-called "unsolicited testimonial" of any spontaniety or legitimacy.

A certain class of proprietary medicines are merely "grog in disguise." To this class belong such preparations as "Peruna," "Lacupia," "Vibroma," "Vitadatio," and certain medical "Bitters" and "Wines." Ignorance of the amount of alcohol in such class of "medicines" tends to promote the drink habit and secret tippling among the community. I have made a list of proprietary medicines now offered for sale on the Brisbane market, and which are reported to contain more than 5 per cent. of proof spirits. Subtle drugs are frequently sold under concealment of a trade-mark name. The sale of deleterious drugs under secret formulæ is a common practice. Certain "Headache Powders" are very popular with the public, especially women, and are usually taken by the latter without particular reference to the dose or frequency of administration. For the most part the basis of these headache cures contains Antefebrin or Acetanilide, a deadly drug, producing toxic effects when taken in small but repeated doses. The dangers arising from the habitual use of preparations containing the drug "Cocaine" are well known to the medical profession. The over-stimulated nervous systems of persons addicted to the "cocaine habit" necessitates frequent, and often secret, use of proprietary medicines known to contain this drug. "Soothing Syrups" are also popular preparations among mothers and nursemaids. "Soothers" contain such drugs as morphia and opium. They are eminently adapted for increasing the infant mortality. It is said on good authority "that 15,000 children are killed every year by soothing syrups and other similar preparations" (Dr. Wm. Murrell, Lecturer on Pharmacology at the Westminster Hospital, London). "Soothing Syrups" and "Cough Mixtures" can be obtained from many storekeepers and drapers without the restrictions imposed on chemists by the Poisons Act of Queensland.

Exorbitant prices are demanded for certain "Electric Belts," "Artificial Ear Drums," &c., which contrivances are worth in intrinsic value but a few pence, and are often absolutely worthless for the ailments they profess to cure or alleviate.

Ecbolic, emmenagogue, and abortifacient drugs, real or supposed, are openly advertised and sold by persons other than chemists, in Brisbane, and without prescription by a locally qualified medical practitioner. "Preventive" goods and other apparatus are also openly sold in certain shops in this city, and command a large sale.

The death rate from poisoning, accidental or determined, is higher in Queensland than in any other State of the Commonwealth, and compares unfavourably with deaths from the same cause in other countries. Owing to the lax administration of our "Poisons Act" it is quite as easy for the general public to obtain certain deadly poisons as it was before the Act was passed. Carbolic acid has been sold by storekeepers in beer bottles, with the label "Pale Ale" still unobliterated by any "Poison" label. Any would-be suicide can easily purchase a pint of carbolic, sulphuric, and other acids without restriction. Arsenic is frequently stored in loose quantities on the shelves of many country storekeepers, side by side with bicarbonate of soda and other groceries.

Many popular patent preparations sold by storekeepers and large wholesale drapers contain drugs, the dose and therapeutical use of which the shop assistant is absolutely ignorant of. As a case in point, which came under my personal knowledge the other day: A woman purchased a bottle of "Chlorodyne" (containing morphia and prussic acid) at a large drapery store in this city, and on asking the ordinary dose for a child of three years of age she was told by the shop assistant to give a "teaspoonful or so."

The Government endow hospitals for the purpose of alleviating the suffering of the indigent poor, who can thus gratuitously secure skilled medical and surgical advice. The law provides that the person so offering advice or prescribing medicines, or performing surgical operations, shall give proof of his competency by examinations before a recognised University Faculty or College Board. The chemist or pharmacist also requires to be qualified by examination before he can dispense medicines. No such qualification is demanded of the "Quack" who, apparently, is quite an irresponsible person.

The law provides elaborate and expensive machinery for the safeguarding of the public against many other forms of fraud, and it is only logical to demand that the law should protect a people dosing itself with quack medicines, and being dosed by ignorant tradespeople with medicines of the composition of which the latter are often ignorant.

II.—HOW THE MATTER IS DEALT WITH BY PRESENT LEGISLATION AND ADMINISTRATION IN THIS STATE.

(*a*) Sale and Use of Poisons Act, 1891.

In the passing of this Act the Legislature probably had only one object in view—viz., the protection of the public. This Act is based on the English Acts (Pharmacy Acts, 1852 and 1868).

(1) A classification of "Poisons" is drawn up, and the sale of these is entrusted to certain persons, ostensibly pharmaceutical chemists. In arranging the classification, two schedules are made use of—the first containing a number of deadly chemicals and drugs, including arsenic, prussic acid, strychnine, corrosive sublimate, &c., which may not be sold unless the purchaser is over eighteen years of age, is known to the vendor, or is introduced by some mutual acquaintance. Such sales must also be registered and attested by the signature of the purchaser, the name and quantity of the article, and the purpose for which the poison is wanted entered in the "Poisons Sale Book." But the sale of the articles in the second schedule, although comprising dangerous poisons, such as carbolic acid, oxalic acid, various mercurials, Vermin Killer (phosphorous), &c., can be effected without any of the formalities necessary to Schedule I., it being only requisite that the name and address of the seller, the name of the article, and the word "Poison" be attached to the bottle or packet.

(2) Unqualified persons are not allowed to sell poisons, but any person, on payment of a fee of £1, may receive from two justices, if latter satisfied, a certificate as a "Dealer in Poisons."

(3) Wholesale dealers are exempt from the Act.

(4) The Act does not extend to the sale of patent and proprietary medicines.

The administration of the Poisons Act has been "honoured more in the breach than the observance." The provisions of section 4, subsections 1, 2, 3, and 4 are rarely carried out, except by chemists and druggists. The "Poisons Sale Book," in which book sales and particulars are required to be recorded, is seldom kept by storekeepers. The "receptacles" for the exclusive storage of poisons, "fitted with lock and key," is conspicuous only by its absence.

The wrapper or cover containing the poison is but rarely marked with a poison label, as provided for in section 10 of the Act.

(*b*) Licensing Acts, 1885 and 1895.

Section 109 of the 1885 Act provides that the sale of liquor by *unlicensed persons is prohibited.* In the Liquor Act of 1895, the term "liquor" is defined as "Wine," Spirits, Beer, Porter, Stout, Ale, Cider, Perry, *or any spirituous or fermented fluid containing five percentum or more than five percentum of proof spirit.* Under this Act, therefore, any proprietary medicines containing more than the specified quantity of proof spirit comes within the meaning of the above section. This means that it is illegal for grocers, drapers, and storekeepers to sell such proprietary articles as "Peruna," "Pain Killer," "Safe Cures," &c.

(*c*) Health Act, 1900.

The definition of "drugs" under this Act is "any substance, vegetable, animal, or mineral, used in the composition or preparation of medicines, whether for external or internal use, including tobacco."

Under section 93 (v.) "No person shall sell any drug so mixed, coloured, stained, or powdered with any ingredient or material which the Governor in Council by Order in Council declares to be an injurious ingredient." It is essential to this offence that the article should be proved injurious to health. Where this can be shown, there is a penalty of £50 for a first offence, and imprisonment for a second conviction. The drawback is that ignorance of the adulteration is a good defence, and this excuse is generally resorted to.

Section 94 provides that "Any person who sells any food or drug which is not of the nature, substance, and quality demanded by the purchaser shall be liable to a penalty not exceeding £20. It is provided, however, that an offence shall *not* be deemed to be committed under this section "when the drug or food is a proprietary medicine, or is the subject of a patent in force within Queensland." This

Act does not cover proprietary or patent medicines. The vendor sells the article for what it purports to be, and may be ignorant of what it contains, and in this respect it may be held that it is not sold to the prejudice of the purchaser. Under section 105 the Commissioner may make regulations with respect to "regulating the wording on labels to be used in the sale of *mixed or altered* drugs. The provisions of the Health Act are inefficient to meet the case, and have little bearing on the sale of patent and proprietary medicines, alcoholic medicines, or quack nostrums containing poisons.

III.—LEGISLATION IN AUSTRALIA AND ELSEWHERE

As a result of the recent revelations as to the composition of many patent medicines, and the action taken by the Queensland authorities with regard to an imported medicine known as "Peruna," legislation dealing with the sale of food and drugs is occupying a prominent place in the consideration of legislative bodies of several of the States of the Commonwealth.

In Victoria a Pure Foods Act has been passed which will effectually deal with the whole subject. Regulations as to drugs have been made by the Food Standard Committee appointed by the Victorian Government. The following is a copy of these regulations, which take effect from the 31st December, 1906:—

> 1. No compound drug of which the average dose is more than one teaspoonful (60 minims) for adults, or is more than one-half of one teaspoonful for children under five years of age, unless such compounded drug is a preparation set out in the British Pharmacopœia or is sold specially as an alcoholic compound, shall contain more than ten percentum, by volume, of Ethyl Alcohol.
>
> 2. No drug or compound drug other than any sold specifically as one of, or as containing one or more of the substances set out herein, or any of their derivatives, shall contain Opium, or Belladonna, or Stramonium, or Nux Vomica, or Cannabis Indica, or Cocaine, or Heroin, or any derivative of any of those drugs, or Chloral Hydrate, or Bromides, or Sulphonal, or Trional, or Veronal, or Paraldehyde, or any other synthetic hypnotic substance, or Phenazonum, or Phenacetinum, or Acetanilidum, or any other allied synthetic substance.
>
> Any person who sells, or manufactures, or applies a description to, or sells under any description, any drug in any manner contrary to the provisions of the Health Acts, is liable to the penalty prescribed for an offence against the said Acts.

In New South Wales similar legislation is to be introduced. Bills amending food and drug legislation have also been drafted by the South Australian and Western Australian Governments. In France, Germany, Sweden, Norway, and in several of the Swiss Cantons the sale of secret medicines is absolutely forbidden under heavy penalties. In Italy advertisements of claims of merit are forbidden. In Germany, with rare exceptions, patent medicines and proprietary articles can only be held for sale by licensed apothecaries. Until recently the various States of America had separate food laws for each State, and these varied enormously.

A Bill has now been passed, not by local State legislatures, but by Congress, for the whole of the United States. One provision of this Bill enacts that patent medicines intended for exportation to other States shall bear a label specifying the amount of alcohol and of certain narcotic drugs present.

The Commonwealth Government has recently passed the Commerce Act, and the Regulations made thereunder will shortly come into operation (1st January, 1907); timely warning, therefore, being allowed to manufacturers abroad.

The Act and Regulations deal with the labelling of food and drugs that are either exported from or imported into the Commonwealth; *but goods exported from one State to another do not come within the scope of the Regulations.*

The Regulations made under the Commerce Act will therefore be no protection to the inhabitants of a State from the misdemeanours of their fellow-countrymen, and there is also no guarantee that after importation the goods will not be tampered with by unscrupulous local vendors.

Under the health statutes of the various States of the Commonwealth the health authorities of Queensland, Victoria, New South Wales, and Tasmania have made regulations prescribing standards for the composition of various foodstuffs and drugs. The standards vary in many respects in each State, and there can be no uniformity of procedure and certainty of action until all the States adopt one uniform code of regulations.

In a letter of 1st October, 1906, addressed by the Honourable the Prime Minister of the Commonwealth to the Honourable the Premier of Queensland, Mr. Deakin invites the co-operation of the services of the health officers of the State in carrying out the provisions of the Commerce Act relating to the better control and supervision of importations of patent medicines, artificial foods, and medicinal appliances. It is proposed that samples of those classes of goods be occasionally obtained by Customs officers, and submitted to the health authorities in the State for report as to whether—

(1) They are deleterious to the public health;

(2) The trade descriptions are false and misleading in regard to their curative effects, or in any other particular which may deceive the purchaser; and that if they are found deleterious or falsely described, their importation shall be prohibited.

I have always contended that what was really needed was inspection and examination at the port of entry—viz., the Customs—before delivery of imported goods to the consignee.

I shall most willingly, with the sanction of the Honourable the Minister, comply with the request of the Honourable the Prime Minister of the Commonwealth, but I would beg to point out that some 100 or more samples of foodstuffs are already waiting examination in the Government Laboratory, owing to the want of adequate assistance to the Government Analyst.

The following are the Regulations in connection with the Commerce Act:—

(*a*) In the case of medicines prepared ready for use, and containing 10 per cent. or more of ethyl alcohol, if the average dose recommended exceeds one teaspoonful (60 minims), the trade description shall set out the proportion or quantity of alcohol in the medicine.

(*b*) In the case of medicines prepared ready for use, and containing any of the following drugs (or the salts or derivatives thereof), viz.:—Opium, morphine, cocaine, heroin, stramonium, nux vomica, cannabis indica, bromides, sulphonal, trional, veronal, paradehyde, or any synthetic hypnotic substance, phenazonum, phenacetinum, or acetanilidum, or any allied synthetic substance, chloral hydrate, belladonna, cotton root, ergot, or any abortifacient, the trade description shall set out the names of all such drugs so contained.

A Bill entitled "The Quackery and other Frauds Prevention Act, 1906," was introduced into the New Zealand House of Representatives in September last, and has reached the Committee stage. At the request of the Honourable the Home Secretary, I have drafted a Bill for the better control and supervision of the sale of dangerous drugs and medicaments. The Bill deals in a comprehensive manner with the matters set out in the "Memorandum," under the heading "Necessity for Action."

CANCER RESEARCH FUND.

The Fifth Annual Report of the Imperial Cancer Research Fund, being the report for the year 1906-1907, is now available.

"The wide range of research has been maintained as in previous years, but the hopes of advancing knowledge of cancer have become more and more centred in experimental investigations. . . . The statistical investigations have been continued in the London and provincial hospitals, in India, and in various colonies and protectorates."

A statistical investigation of cancer was instituted during the year with regard to hospital returns, and to cases occurring in the practice of private practitioners throughout the State. The returns are not yet complete, but will be forwarded, together with specimens, through the proper official channels as they come to hand.

I have, &c.,
B. BURNETT HAM, M.D., D.P.H. (Camb.),
Commissioner of Public Health.

The Under Secretary, Home Secretary's Department.

LONDON SCHOOL OF TROPICAL MEDICINE LIBRARY

APPENDIX A.

REPORT OF THE CHIEF INSPECTOR.

Department of Public Health, Queensland,
Brisbane, 8th July, 1907.

SIR,—I have the honour to submit herewith a report of the work done in my Department for the financial year ending 30th June, 1907.

METROPOLITAN AREA.

The sanitary condition of the Metropolitan Area is slowly improving. Numbers of sectional sewers have been constructed for the purpose of draining properties where no provision for the removal of domestic drainage previously existed, thus abating nuisances of a serious character. A considerable amount of concrete water-channelling has also been laid, and a marked improvement is apparent in the sanitary state of the thoroughfares attended to, where formerly domestic drainage discharged into the unformed water tables. The construction of storm and other water sewers is most urgent in all cases where sewerage is discharged into natural watercourses. There are numbers of these within the area, all more or less in the same insanitary condition, and may be aptly described as elongated cesspools.

Eight hundred and fifteen inspections have been made, and numerous special inspections within the Brisbane Municipality, in company with G. Roderick Fraser, City Inspector. These mutual inspections have invariably been attended with good results. The accumulations of household garbage once so common on all vacant allotments are gradually disappearing. The Ithaca Town Council have recently entered into a contract for the removal of household and trade refuse. Rubbish-bins have been provided for the use of householders, and a marked improvement is bound to result in the sanitary condition of this municipality. The majority of the sanitary depôts have been inspected, and found to be kept in good order.

COMPLAINTS.

A large number of complaints in writing have been received during the year, and prompt action taken where it was justified. Numbers of these complaints, however, were merely the results of neighbours' quarrels.

INTIMATION OF NUISANCE NOTICES.

Twenty intimations of nuisance notices were sent to various local authorities, calling attention to nuisances requiring abatement within their areas. The number of notices forwarded do not bear relation to the total number of nuisances dealt with by officers of the Department. It was found that good results obtained by conferring with the inspectors of the local authorities concerned. Among the many nuisances dealt with were the following:—Premises without closet accommodation; full and overflowing cesspits; absence of drains; untrapped and otherwise defective drains; accumulations of garbage; dirty yards; stable yards in an insanitary condition, &c.

SANITARY DISINFECTION AND INFECTIOUS DISEASES.

A total of 637 cases of infectious diseases have occurred within the Metropolitan Area during the year.

As many cases of diphtheria occurred among the scholars attending many of the State schools in and around Brisbane, the Commissioner of Public Health caused inquiries to be made regarding the matter. Dr. H. Chesson, Health Officer, visited the schools, examined a large number of children, and found that many of them were suffering from a mild form of diphtheria. In view of the large proportion of children attacked, the Commissioner considered it advisable to close all the schools in order to have them disinfected. The work of disinfection being placed under my charge, the cleansing gang was increased by 12 other men. Forty-seven schools were thoroughly cleansed and disinfected within the short space of three weeks. A small flying-gang was placed under the direction of Inspector Munro, who attended to 13 schools within the Metropolitan Area, outside the cities of Brisbane and South Brisbane. The floors and verandahs of the schools, as well as the desks and other furnishings, were treated with a solution of Cyllin of the strength of 1 in 200. The walls and ceilings were similarly treated. All the slates and drinking mugs were also washed in Cyllin. Schools having varnished walls were sprayed with a 5 per cent. solution of formalin. The drains, lavatories, &c., were also disinfected with a strong solution of miscible carbolic.

During the year 540 premises were disinfected for the local authorities where infectious diseases had occurred. The railway carriages used for the conveyance of 5 cases of leprosy, 1 of consumption, and 1 of plague were also disinfected. Three private residences were disinfected at the request of the occupiers, making a total of 595 disinfections for the past twelve months.

BUBONIC PLAGUE.

This first case of plague for the fiscal year occurred in November. The sharp but short outbreak at New Farm occasioned a considerable amount of labour to the Department. Decisive action was taken by the Commissioner of Public Health to stamp it out. A vigorous crusade of cleansing and disinfection was initiated within a large radius of the infected premises, 17 houses and business premises being cleansed and disinfected; entailing 23 disinfectations. The ground underneath and around the dwelling-houses was sprayed with a 4 per cent. solution of sulphuric acid, and, after a short interval, with a 20 per cent. solution of miscible carbolic. Eight loads of rubbish were removed, independent of the large quantity consumed by fire on the various premises. The necessity for this work will be at once apparent to the lay mind when it is mentioned that three of the gang went down with plague, one of whom died.

Fifteen plague patients' funerals were superintended by Inspector Munro, who also saw that the regulations in connection with the funerals were properly carried out.

Rat Destruction.

The work of rat destruction was carried on with unabated vigour by the departmental gang throughout the year, with gratifying results. Infected rats made their appearance in the centre of the city of North Brisbane early in the month of August. Eighteen thousand eight hundred and sixty-two rats and 1,937 mice were destroyed during the past year, making a grand total of 20,799 rodents, of which 13,083 rats and 1,548 mice were examined, making a total of 14,631 rodents examined bacteriologically during the year. Of the number examined, 43 rats were found to be plague-infected. No infected mice were found this year. Under the supervision of Inspector Daniel, 655 gallons of miscible carbolic were manufactured; 145 gallons have been issued to Government Health Officers in different parts of the States; 310 gallons have been supplied to the Government Stores; and 200 gallons used by the rat gang and for disinfecting purposes.

One thousand and seventy-six complaints were received from private individuals regarding rat-infested premises; these have all been attended to.

One hundred and ninety thousand eight hundred and seventy-two poison baits have been manufactured and laid by the gang in and around Brisbane. A large quantity of Dansyz virus has also been laid.

Three hundred and twenty-five packets of poison have also been supplied to the public for the purpose of eradicating rats on their premises.

Shipping Regulations.

The shipping regulations have remained in force throughout the year. The difference between the number of vessels fumigated this year as compared with last year is accounted for by the fact that all vessels are now fumigated on the round trip. Consequently, the vessels are all fumigated at the Northern ports. One hundred and seventy-three berthing certificates have been issued to oversea and other vessels during the year.

OTHER PARTS OF THE STATE.

Charters Towers and Queenton.

During the latter part of the last financial year I was instructed to proceed to Charters Towers for the purpose of making a sanitary survey of the whole district, and to inquire into the cause of the constant recurrence of enteric fever on this goldfield. A considerable amount of feeling was displayed at the action of the Health Department, but is it gratifying to find that at the valedictory meeting of the Charters Towers Town Council, held on 2nd February, 1906, the retiring mayor said: "They had saved the town from digrace by cleaning it up. Good had already resulted from it. Already the garbage carts were removing 4 tons of rubbish each day." The work of cleansing had only been commenced a few weeks previous, and during that time 256 tons of garbage had been removed from a municipality 1 mile square, and the work of cleansing was still in progress. It will, therefore, be seen that the action of the Department was justified.

Cairns.

A recrudescence of bubonic plague took place in Cairns in September. Acting under instructions of the Commissioner of Public Health, I left for the latter place on the 11th of the month for the purpose of assisting the Government Medical Officer in the measures initiated by him to combat the disease. A house-to-house inspection was made, and active measures taken for the destruction of rats. The town was thoroughly scavenged. The Council afforded me every assistance by placing a number of men and drays at my disposal, in order to push on the work. Some 230 loads of garbage were removed and disposed of by burial and by fire.

Clifton.

Opposition having been raised to the use of the proposed sanitary depôt, the site of which I selected for the Shire Council in June of last year, the Council again requested the services of an officer of this Department to visit the district and select another paddock for their sanitary service. Accordingly, I again made a selection, and it is quite probable that opposition may be made regarding this site also. The depôt selected in the first instance is the more suitable. Reports concerning this matter have already been submitted.

Boonah, Branyan, and Waterford Sugar Plantations.

A considerable amount of typhoid fever occurred on the abovenamed plantations, as well as on adjacent farms, the cases having been removed to the Bundaberg General Hospital. I was directed to visit the district and report. The sanitary condition of some of the places left much to be desired. Instructions were supplied to the owners regarding the best method for dealing with the sanitary service and the disposal of garbage collected at the workmen's quarters and residences of the permanent employees; as well as instructions for the abatement of drainage nuisances. This also has been the subject of a special report.

Boonah.

The proposal by the local authority to erect a pig saleyard on a railway siding contiguous to Boonah Railway Station—which is situated in the heart of the township—would probably have resulted in a grievous nuisance, as well as a serious menace to the health of the inhabitants. The only drainage possible was a natural stormwater channel passing through the town between hotels and other property, and there was no water supply for cleansing the proposed pig pens.

I selected an alternative site at Dugandan, where any nuisance likely to arise will be reduced to a minimum. This site has the advantage of a water supply, and the surface drainage a fall to a large grazing paddock. I have already submitted a detailed report concerning this.

GERALDTON, MOSSMAN, AND PORT DOUGLAS.

An outbreak of plague having occurred in the canecutters and woodgetters' camp in the Mossman and Port Douglas districts, Acting Inspector Dudley was despatched to assist Dr. H. Chesson, Departmental Health Officer, in the measures proposed for the destruction of the vast hordes of rats that infest the sugar-cane. Inspector Dudley also proceeded to Geraldton for the purpose of assisting the Government Medical Officer there, and to instruct the canefarmers in the most approved methods of rat destruction.

CAIRNS, MACKAY, GLADSTONE, AND BUNDABERG PLAGUE HOSPITALS.

Prior to my departure from Cairns I received instructions to visit the various plague hospitals on my way down the coast, for the purpose of making an inspection as to their state of repair, and also to take an inventory of the goods and effects, and a note of their condition. The inventories and reports have been submitted.

IPSWICH.

Two cases of plague have occurred at Ipswich during the year. The first case was an employee in a produce store, which was known to harbour rats. The departmental rat gang was sent from Brisbane in order to destroy the rats. A large number was caught as the result of their operations. The second case took place on a farm at Amberley, 5 miles out of Ipswich.

I have, &c.,

JOHN SIMPSON, Memb. Royal San. Institute, Great Britain,
Chief Inspector, Department of Public Health, Queensland.

Commissioner of Public Health, Brisbane.

APPENDIX B.

REPORT OF THE GOVERNMENT ANALYST.

Government Chemical Laboratory,
Brisbane, 31st July, 1907.

SIR,—I have the honour to submit the following report of the work done in the Government Chemical Laboratory during the period from 1st January, 1906, to 30th June, 1907.

My last annual report was to the Under Secretary for Mines for the year 1905. As I was transferred to your Department during the latter part of 1906, this report necessarily covers a period of eighteen months.

During that period 4,028 samples were examined, involving 17,789 determinations. This is a large increase in the amount of work done, and is partly due to the increased facilities for work in the new laboratory, and partly to the increased assistance granted during the last six months.

The value of the new laboratory was clearly indicated by the fact that in the second half-year in it, after the fittings were arranged in fair order, with one assistant less than in the last half-year in the old laboratory, more than twice the amount of work was done. The cost of changing was, therefore, more than covered by the value of the increased amount of work done in the first year in the new laboratory.

The work done for the various departments during the eighteen months is shown in the following table:—

Department.	Samples.	Determinations.
Health	669	3,549
Police	268	2,737
Inland Revenue	98	1,113
Port Office	1,756	3,591
Geological Survey Office	465	2,709
Mines	299	722
Railways	95	986
Stores	76	572
Works	51	310
Home Secretary	18	109
Hydraulic Engineer	9	113
Other departments	8	44
Customs	189	993
Defence Forces	17	221
Public	10	20

The work done for the Health Department has more than doubled. The checking of the cream of tartar importations involved the analysis of 279 samples. Of this number 74 samples, representing 65 shipments, were below 95 per cent., but of these 65 lots, 49 were between 94 and 95 per cent., 4 between 93 and 94 per cent., 9 between 92 and 93 per cent., and 3 between 90 and 92 per cent. With only 16 samples below 94 per cent. out of a total of 279 (and none of these 16 below 90 per cent.), the quality of the imported cream of tartar must be considered very good. In the case of the low samples no direct adulterant was found, lack of purification from sulphate and tartrate of lime being the only cause of rejection. Of 24 samples of milk examined 2 were found below the standard, while 8 out of 27 samples of condensed milk failed to reach the 10 per cent. butter fat standard. Of flavouring essences 36 samples out of 77 examined failed to come up to standard. Essence of lemon, containing only a trace of oil of lemon in very dilute spirit, was the most common offender, while essence of vanilla, made with exhausted vanilla beans or from artificial vanillin was not uncommon. Methylated spirits was found to be used by two manufacturers for making these flavouring essences, but on convictions being obtained this method of adulteration ceased. Of 75 samples of pickles, sauces, vinegar, &c., 26 were found either to contain preservative or to fall below the standard in some other way. Forty-nine samples of jams, jellies, and confections were examined, but only two were condemned owing to the presence of preservatives. Of 38 samples of tinned meat and fish examined 11 were condemned as containing preservatives. The examination of 10 samples of cordials and soft drinks resulted in 6 being condemned. One sample of hop beer was found to contain 16·6 per cent. proof spirit, and another, from the same place, 25·2 per cent. proof spirit. Fifteen samples of peas out of 18 tested were found to contain sulphate of copper, and in no case was the amount less than 1·5 grains per lb. The other samples examined comprised water (18), flour, oatmeal, &c. (13), and smaller numbers of samples of tea, coffee, cocoa, wines and spirits, cheese, oil, baking powder, and other substances.

For the Inspector of Inland Revenue, who also acts as a food inspector, and to whom, during the first part of the period now under review, samples were reported directly, 98 samples were examined. Of this number 47 were samples of liquor, and 19 of these were found adulterated. Nicotine was found in rum from two premises; one merchant was fined for selling adulterated brandy, and one hotel-keeper for selling adulterated gin. Of the food samples directly reported to the Inland Revenue Department, 12 samples of milk were condemned out of 16 submitted; 8 samples of sauces, vinegars, &c., were found below standard or adulterated out of 9 tested; 5 samples of essences were condemned out of 6 tested; and 3 samples of cochineal out of 5 submitted were found to be fictitious. Other samples of foodstuffs were passed.

As usual, the work for the Police Department consisted mainly in the analysis of samples in connection with cases of suspected poisoning. Samples of drugs, medicines, internal organs, &c., were analysed in connection with 65 such cases. In 32 cases no poison was found, in 13 cases cyanide had caused death, arsenic in 8 cases, carbolic acid in 3 cases, oxalic acid, strychnine, and morphia, 2 each, and phosphorus, antimony, and chloral, 1 each. Six samples of clothing and 1 knife were examined for blood stains, and a number of counterfeit coins were found to have been made with solder. The work of the Police Department, both from the point of view of its importance and the time it takes, bulks much more largely in the work of the laboratory than the number of samples received from the Department would indicate.

The work done for the Mines Department and the Geological Survey Office has also materially increased. For the Mines Department 256 samples of explosives were examined, nearly all being found in good condition. There were no cases of low-heat test, and only a few cases of exudation. Thirty-eight samples of ores and minerals were analysed for the mines, and samples of oil, water, metal, and air made up the balance of the work. The samples of air from the old workings of a mine where carbonic acid was present in quantity gave 4·5 and 12·5 per cent. of carbon dioxide. For the Geological Survey Office the following work was done:—

	Samples.	Determinations.
Ores for gold and silver	162	648
Ores for gold, silver, and copper ...	121	726
Ores for gold, silver, copper, &c. ...	8	66
Ores for gold, silver, and other metals	62	430
Ores from copper, bismuth, lead, iron, chromium, tin, &c.	54	165
Ores complete	17	328
Rare earths	3	10
Minerals	4	32
Clays	3	36
Coals	27	242
Coke	3	18
Graphite	1	8
Total	465	2,709

For the Portmaster 3 samples of oil, 1 of water, and 1,752 of explosives were examined. The Customs returns for the year 1906 show that 30,702 cases of nitro-glycerine explosives were imported, an increase of 5,551 cases over the previous year. For the first six months of 1907 the imports were 16,688 cases, a proportionate increase over last year. As smaller stocks are held in the magazines now than was the case two years ago, this shows the consumption of explosives to be steadily increasing. Only 3 cases were destroyed for low-heat test during the eighteen months. These were 3 cases of old dynamite which had been left for some years in one of the Government magazines. Twenty-six lots, involving 2,130 cases, were stopped for exudation of free nitro-glycerine. After separation of the batches which showed no exudation, picking out the good cartridges from those exuding, and in some instances where there was only slight exudation, rewrapping, there remained 139 cases which were destroyed; 66 of these were from a shipment which had been damaged by getting soaked with salt water. Practically, the whole of the remainder destroyed was found exuding on arrival in the State. As I have before noticed, exuding blasting gelatine or gelignite, when rewrapped, generally shows a strong tendency to exude again. During 1906 some explosives were rewrapped three times, and then several cases had to be destroyed. Rewrapping only seems to be effectual where only a small proportion of the cartridges are exuding, where the exudation is slight, and when the explosives are used within a short time of being reconditioned. During 1906 an Explosives Act was passed, so that the control of the explosives trade will now be much more satisfactory. No appointments have yet been made under the Act.

For the Railway Department the principal part of the work consisted in analysing samples of oils, metals, fabrics, and other stores, to determine whether they were up to standard or not. Forty samples of oil were examined, and of these 31 were samples from contract supplies, 8 of the 31 falling below the required standard. Out of 17 waters examined for locomotive boiler use 8 were found unsuitable for this purpose. Of 10 samples of fabrics submitted, 7 were up to standard and 3 failed. Eleven samples of metal examined were found to be of good quality, as were also 4 samples of paint. Other substances examined for the Railway Department included samples of tar, explosives, disinfectants, kerosene, coal, and soap. The comparatively large proportion of samples found below standard shows the absolute necessity of checking all supplies of stores. The water softening plant at Toowoomba has been running smoothly now for twelve months, and the weekly checks made show very little variation in the quality of the softened water.

For the Government Storekeeper 76 samples were examined, and of these there were 56 samples of foodstuffs, mostly submitted in connection with the food supply of the Government institutions. Two samples of condensed milk and one of tinned peas failed to pass. All the other samples were up to standard. Of 11 samples of soap examined 2 failed to reach the standard. Samples of spirits, oils, and leather completed the work for the Stores Department.

For the Works Department 39 samples of paints and oils were examined. The oils all passed the test, and 14 samples of paint; but 19 samples of paint were found not up to standard; 17 of these were from four school buildings supposed to be finished with zinc paint, but the samples taken by the Inspectors of Works showed lead to have been used instead. Other work for this department included analyses of disinfectants, stones, sand, and water-proofing.

Miscellaneous work was done for other departments, as follows:—Home Secretary, 18; Hydraulic Engineer, 9; Lands Department, 2; Chief Secretary, 1; Government Printer, 2; Hospital, 1; Agriculture, 2; and for the general public 10 samples of ore were assayed during the eighteen months.

For the Commonwealth Government the Customs sent in 99 samples of oil, 43 samples of pills, medicines, &c. (for opium), 21 samples of wood naphtha, 3 of kerosene, 5 of dyes, and 9 miscellaneous. Of 9 samples of brandy 3 were condemned as not pure grape brandy. For the Defence Forces 3 samples of rifle oil, 6 of cordite, and 8 samples of furnace gases were examined.

The general work of the laboratory is now much more thorough than was possible in the old building. Already in the new laboratory the space is fully occupied, and there is little, if any, room for expansion.

I have, &c.,

J. BROWNLIE HENDERSON, Government Analyst.

The Commissioner of Public Health, Brisbane.

APPENDIX C.

REPORT OF THE GOVERNMENT BACTERIOLOGIST.

Bacteriological Institute,
Brisbane, 6th August, 1907.

SIR,—I have the honour to report on the work carried out at the Bacteriological Institute during the year ended 30th June, 1907.

SPECIMENS EXAMINED.

The total number of specimens submitted for examination was 17,933, or an increase of nearly 1,000 above the number received during the previous year.

THE STAFF.

I have again to record my obligation to the whole of my staff in assisting me to carry out, not only the ever-increasing routine work, but many important original researches. In this connection I have been ably assisted by Messrs. Beardmore and Thorn.

Mr. Kelly is still in charge of the clerical work, while Messrs. Justelius and Thomson have been appointed as cadets in the laboratory. Mr. Neumann, in addition to his duties as caretaker of the institute, has charge of all the experimental animals.

OFFICE WORK AND CORRESPONDENCE.

This work has increased considerably during the past year. A large number of communications were from stock-breeders and dairy farmers inquiring for advice on such subjects as tick fever, tuberculosis, pleuro-pneumonia, blackleg, &c., while there is still the usual inquiries from medical practitioners, health officers, and others regarding the examinations of specimens for typhoid, diphtheria, tuberculosis, pathological material, &c.

The money collections were as follows:—Fees for the examination of specimens, £74 11s. 6d.; pleuro virus supplied, £38 16s. 3d.; cultures and culture media, 10s.; and for tuberculin, 8s. 6d.; total, £114 6s. 3d.

GENERAL.

Demands are frequently made upon the institute for microscopic specimens of various disease-producing organisms, sections of pathological tissues, and animal parasites, such as ticks, &c.; and with as little delay as possible these requests are complied with.

Collections of specimens have from time to time been forwarded to various scientific institutions in America, England, and the Continent. Recently a collection, illustrating, as far as possible, the life-history of many species of our Queensland Ixodes, was forwarded to the Bacteriological Laboratory, King's College, London.

Supplies of Pleuro-pneumonia Virus.

There is an increasing demand from stock-owners for pleuro virus supplied by the institute, the reason being that all virus sent out is practically guaranteed to be free from tubercular taint and the contamination of extraneous putrefactive organisms. As it is preserved with glycerine, it will remain sweet and efficacious for inoculation purposes for three weeks. During the past year sufficient virus has been supplied to inoculate 34,675 head of cattle.

Lectures.

During the year I have delivered a number of lectures, illustrated by lantern photographic diagrams, &c., on such subjects as "Ticks and Tick Fever," "Pleuro-pneumonia," "Tuberculosis," "Disinfection," "Water Purification," &c.

Demonstrations.

I have given practical demonstrations on the method of preventive inoculation for tick fever, also the treatment of animals during inoculation fever.

Supervising the Inoculation of Valuable Stud Cattle.

After the last Royal Agricultural Show in Sydney a number of Northern stock-breeders purchased some valuable stud bulls for their respective stations, upon which there were virulent ticks. Acting on my suggestion, the owners had these animals inoculated for tick fever, which work I undertook to supervise, and also the welfare of the animals until they had recovered.

With regard to this work, it is highly gratifying to know that all the animals were inoculated twice with recovered blood, without the loss of a single beast. Moreover, they have all remained immune since their sojourn in the tick-infested country.

Plague.

There has been an increase in the number of rats and mice received for examination. The numbers of rats and mice examined were 14,360 and 1,639 respectively, of which 43 rats were found plague infected.

There were 114 specimens of lymph, blood, sputum, pus, and viscera, from suspected plague cases (human), of which 50 were found to contain plague bacilli. In each of the cases the three principal tests were employed—viz., microscopical, culture, and animal inoculations.

A progress report has been submitted on the various plague investigations conducted at the institute during the last two years. The report deals with the following:—

1. The transmission of plague from rat to rat through the agency of fleas.
2. The direct inoculation of plague bacilli from rat to rat without resource to artificial cultures.
3. Immunity, and the subacute form of plague.
4. Feeding susceptible animals with plague bacilli.
5. Pleomorphism of plague bacilli.
6. Method of staining plague bacilli.

On the 24th April last Mr. Beardmore accompanied Dr. Chesson, Health Officer, to Port Douglas, in order to examine for plague the rats, which were reported to be very numerous on the various plantations. He also examined a number of specimens from suspected plague patients, the result of the work being embodied in the Health Officer's report.

The Use of Pure Cultures of Bacteria for the Destruction of Rats and Mice.

During the past year a considerable amount of time has been devoted to studying the nature and action upon rats and mice, both fed and inoculated with the specially prepared viruses supplied by several proprietary firms. Among those tested were the following:—Danysz, Pasteur Vaccine Company, Laroche, "Azoa" (P. D. and Co.), Bourse de Commune de Paris, and California.

In some of these the bacillus was either dead or, if alive, was so attenuated that its virulence could only be exalted after considerable time and experiment, while in two samples the virulence was maintained. Continued cultivation on artificial media of even these virulent forms soon brought about their attenuation, which could only be obviated by repeated intraperitoneal inoculation of very susceptible animals. By this method I have, since 1st March, 1906, been able to supply almost daily to the Health Department large quantities of virulent broth culture, and, latterly, specially prepared baits, the base of which is oatmeal.

At various intervals this material is tested by feeding rats and mice. Of 60 rats and 9 mice so fed 49 rats and 6 mice died of the disease, the specific organism being recovered again by cultivation on glycerine agar from the heart blood of the infected animal.

It is impossible, even with the above data, to determine the efficacy of these baits for destroying wild rats in and about the city, as one rat may take more than one bait, and some rats, not being very susceptible, may become infected, recover, and thus, for a time, acquire immunity; while the fact must not be overlooked that only a percentage of the rats that die of the disease are recovered. But that rats do die of the disease is shown by the number that are continually found as infected during the daily examination of rats for plague.

Considerable quantities of rat virus have been supplied to Thursday Island, Townsville, and to the sugar and coffee plantations around Port Douglas and Cairns. In a special report, submitted on the 4th May last, I referred to the microscopical appearances and characters of the specific bacillus, and also gave a description of the symptoms and *post-mortem* appearances of infected rats.

DIPHTHERIA.

The specimens received were more than twice the number of those received the previous year. Of 508 specimens examined 196 were found to contain the Klebs-Loffler bacillus. In addition to the usual specimens received from the Children's Hospital and medical practitioners, a special investigation was carried out with swabbings taken from a number of children attending several of the local State schools, where an epidemic in the nature of sore throats had occurred.

In connection with these investigations some 160 cases were examined by cultures and microscopically, after staining the specimens by a modification of Neisser's method, and, in some instances, by animal inoculation. The whole of the specimens were classified to show the various types of diphtheria-like bacilli, according to the description given by Westbrook. This formed the subject of a special report, submitted on the 23rd February last.

TUBERCULOSIS.

Of 454 specimens of sputum examined, 149 contained Koch's tubercle bacillus; while of 27 specimens of lymph, milk, pus, &c., only 1—milk—contained the bacillus.

TYPHOID.

During the past few years there has been a gradual but noticeable diminution in the number of cases of suspected typhoid blood submitted for Widal's test. In 1903 there were 399 positive cases; in 1904, 229; and 1905, 138; and, during the past year, of the 381 specimens received only 119 were positive. It is highly probable that the facilities offered to the various hospitals and medical men for the early diagnosis by bacteriological methods, as applied to the examination of specimens at the institute, may, in conjunction with the gradual improvement in the sanitary condition of dwellings, account for the apparent decrease in this disease.

GENERAL PATHOLOGICAL SPECIMENS.

The number of specimens examined for malignancy was 186. The practical portion of the work is conducted in the laboratory, while the finally mounted specimens are submitted for an opinion to Dr. Wilton Love, the honorary pathologist to the Health Department.

I have, &c.,

C. J. POUND.

The Commissioner of Public Health, Brisbane

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